

Discovering unknown medieval descents : a genetic approach – medieval genealogy for the masses

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Abstract

Genetic genealogy, combining the use of documentary evidence with DNA test results, holds the potential to reveal previously unknown medieval descents for those with little documentary evidence of their ancestry. The work undertaken as part of the Battle of Bannockburn and the Declaration of Arbroath Family History Projects has developed methodologies to advance studies of this nature which are described in this article. Covering various aspects of the process including ethical issues, the role of documentary evidence and appropriate types of DNA testing, the article includes several case studies. The article argues that genetic genealogy can provide a gateway to medieval genealogy for the masses.

This article examines a topic which has been central to the work we have been carrying out at Strathclyde University since 2013, as part firstly of the Battle of Bannockburn Family History Project¹ and now the Declaration of Arbroath Family History Project².

Clearly everyone living today has medieval descents. Most of these are unknown, but many will be from landed gentry, noble and even royal families. This possibility provides the potential for uncovering these unknown medieval descents. How we can go about this is what I will introduce to you here.

I will focus on methodologies for tracing medieval descents, based on the experience of the Battle of Bannockburn Family History Project and the Declaration of Arbroath Family History Project.

These Projects consist of both a documentary and a genetic genealogy strand. The documentary strand in particular has been the major focus of the student work on these Projects, while the genetic genealogy strand is largely carried out by staff and is the area of interest in this article.

DNA surname projects

One of the considerations in these Projects has been assessing the feasibility of successful outcomes with the families being researched.

A good foundation for successful research is the existence of an active DNA surname project, so I will look at this step first and then move through the various stages of the process which we have followed in our Projects, ending up with a brief summary of progress on the Declaration of Arbroath Project and its intended outputs.

¹ University of Strathclyde. Genealogical Studies Postgraduate Programme, *Strathclyde genealogy: projects*.

² University of Strathclyde. Centre for Lifelong Learning, *Declaration of Arbroath Family History Project*.

Families with DNA surname projects are good candidates for researching medieval descents. DNA test results on their own have little value. Research depends on the comparison and matching of results, which is where DNA surname projects are so important.

Surname projects are particularly popular for Scottish clan surnames, the largest being the Clan Donald DNA Project³, Clan Donnachaidh DNA Project⁴, Stewart DNA Project⁵ and Campbell DNA Project⁶.

The importance of these projects is in indicating the genetic groupings of individuals with the surname of interest. The project websites usually indicate a genetic marker called a SNP (Single Nucleotide Polymorphism, pronounced 'snip') for each test taker. These can be used to group the results by their common descent from the specific ancestor in which the SNP first occurred, which we are now calling the SNP progenitor.

Stewart

Table I. SNPs in the Stewart surname group

R1b Group Type 20: R-L746>Z38845>ZZ52. From Sir John Stewart of Blackhall & Ardgowan, d. c.1412													
MIN			12	24	14	11	11-13	12	12	12	13	13	29
MAX			13	24	15	11	11-15	12	12	12	13	13	29
MODE			13	24	14	11	11-14	12	12	12	13	13	29
367895	Sir John Stewart of Blackhall & Ardgowan dc.1412	R-ZZ52	12	24	15	11	11-14	12	12	12	13	13	29
368733	John Stuart d. 4 April 1771 R-S794 (S781-) ZZ52	R-ZZ52	13	24	14	11	11-13	12	12	12	13	13	29
317006	James Stewart, b. est. 1780	R-ZZ52	13	24	14	11	11-14	12	12	12	13	13	29
149404		R-M269	13	24	14	11	11-14	12	12	12	13	13	29
57979	Sir John Stewart of Ardgowan, b. 1368 and d. 1412	R-L745	13	24	14	11	11-14	12	12	12	13	13	29
148505		R-M269	13	24	14	11	11-14	12	12	12	13	13	29
456235	John Stewart born c1680 in Kintyre	R-M269	13	24	14	11	11-14	12	12	12	13	13	29
179069	John Stewart, born Kintyre 1680	R-M269	13	24	14	11	11-14	12	12	12	13	13	29
855102	John Stewart b 1785 d. 1857 (Quebec)	R-BY101802	13	24	14	11	11-14	12	12	12	13	13	29
164047	John Stewart b c1680 Kintyre Z38845 (S781-)> ZZ52	R-BY101802	13	24	14	11	11-14	12	12	12	13	13	29
221200	James Stewart 1754	R-ZZ52	13	24	14	11	11-14	12	12	12	13	13	29
321497	Walter FitzAllan (1106-1177) 1st HSof Scotland	R-ZZ52	13	24	14	11	11-14	12	12	12	13	13	29
704952	John Cole b.1796 South Carolina d.1869 Alabama	R-ZZ52	13	24	14	11	11-15	12	12	12	13	13	29

Table I shows the common type of display found in the public webpages of DNA surname projects. The first and second columns give the test kit number of the test taker and the name of their supposed earliest known male line ancestor. In the third column you can see the SNPs and the subsequent columns show the values reported in the most basic test, the STR test, which will be mentioned later. The SNPs shown in green are those which have been specifically tested and confirmed. Those in red are very general predicted SNPs. So here there are six results carrying SNP ZZ52, two with SNP BY101802 and five with much more general SNPs. BY101802 is a descendant of ZZ52, and so we know that eight of these test takers descend from the SNP progenitor of ZZ52.

Campbell

³ Clan Donald USA, *Clan Donald USA: Genetic Genealogy Project*.

⁴ Clan Donnachaidh DNA Project.

⁵ Stewart DNA Project.

⁶ Clan Campbell Society of North America, *Clan Campbell Society of North America DNA Project*.

Table II shows an example from the Campbell DNA Project. You can see that almost half of the earliest known ancestors listed here had already left Scotland and probably more, since many do not give geographical locations. This highlights one of the issues with DNA surname projects, which is that many of the participants live outwith the UK and do not have a documented descent going back beyond their emigrant ancestor. This is one of the main motives behind their involvement – to discover where their British origins lie and in the case of large Scottish clans, from which branch of the clan they descend. Most of the results here only have a very general SNP indicated.

Table II Largely emigrant Campbell families

428	Daniel Campbell, Lincoln co, NC, born c1784 Pa	R-PH367	12	24	14	10	11-15	12	12	12	13	13	30
7021	John Campbell b. bef 1756 d. 1806	R-PH367	12	24	14	10	11-15	12	12	13	13	13	30
298523	William H. Lard or Laird b. 1808 d. 1872	R-M269	13	23	14	10	11-14	12	12	12	13	13	30
625978	Maxwell Campbell, b. 1790 and d. 1861 of Ireland	R-A5919	13	23	14	10	11-15	12	12	11	13	13	30
16849	Campbells of Auchinbreck	R-M269	13	23	14	10	11-15	12	12	11	13	13	30
26346	Duncan Campbell (c1710)	R-L21	13	23	14	10	11-15	12	12	12	13	13	30
IN42909		R-M269	13	23	14	10	11-15	12	12	12	13	13	30
221171	Malcolm Campbell (1717) of Augusta Co, VA, USA	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
86724	Theophus Nicholas Campbell (1861) of AL	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
152635	Archibald Campbell (c.1787) of Fangfoss	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
59703	James W Campbell (1830)	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
150414	Alexander J Campbell	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
231893	James Campbell (died 1816) of Charleston, SC	R-M269	13	23	14	10	11-15	12	12	12	13	13	30
148939	John Logan Campbell (1817) of Auckland, New Zealan	R-M269	13	24	14	10	10-15	12	12	11	13	13	30

Clan Donald

The Clan Donald have undertaken a large amount of Y-DNA testing, resulting in a very well developed project. On their website, the results presented in a tree format, and show the SNP CLD12. All the test takers below this are either from the Clanranald or Glengarry branches of Clan Donald. The block immediately below is CLD50 and indicates descent from the Clanranald branch. Those with a tick have a documented descent from Somerled and include Ranald MacDonald, Chief of Clanranald, from the senior line of Clanranald, carrying SNP CLD52, and a MacDonald of Glenaladale, who carries SNP CLD 98.

These projects give an idea of the type of genetic grouping which can be carried out using Y-DNA SNPs. As I have suggested, projects such as these can provide a good foundation for research into medieval genealogies, when they have well organised groupings according to SNPs, which show the branching of the families. What is lacking in very many of these projects is a robust framework of DNA test results from well documented individuals which can link SNPs to specific branches. In the examples of the Stewart and Clan Donald Projects, there is such a framework. ZZ52 can be linked to the branch of the Stewarts descending from King Robert III. CLD50 is linked to the Clanranald branch of the MacDonalds.

Tracing documented male line descendants

Once we have one or more families who seem likely to have documented male line descendants and for which there is a DNA surname project, the next stage is to actually trace documented lines in reasonably authoritative sources.

As you will realise, the vast majority of families that meet these criteria are from the peerage or landed gentry, including Scottish clan chiefs, but there is no reason why these same methodologies cannot be applied to any well documented family.

We usually start with *thePeerage.com*⁷ which is easily accessible and is often referenced to sources such as the *Complete peerage*⁸ and *Burke's peerage*⁹. Since in turn the *Complete peerage* is referenced to many primary sources it is fairly reliable. Burke's publications are less reliable and are not referenced, but can be used with caution.

All the volumes of the first edition of the *Complete peerage*, published between 1887 and 1898 are available online at the Internet archive and 6 volumes of the new edition, published between 1910 and 1959.

Some corrections and additions to the Complete peerage by Chris Phillips is available online¹⁰ and also, at the Internet archive, Cokayne's *Complete baronetage*¹¹, published between 1900 and 1909, which covers the period 1611-1800.

The limitation of some of these works is that they usually only follow the main lines of descent of titles. Burke's publications often provide information on cadet lines, but of course lack references to back up the information. A few other general sources which can prove useful are James Balfour Paul's *Scots peerage*¹², the heraldic visitations of the 16th and 17th centuries¹³ and Howard and Crisp's *Visitation of England and Wales*¹⁴ issued from 1893 to 1914. There are also many works of varying quality, devoted to specific families.

Finally, in the case of the Declaration of Arbroath Project, we also have a foundation of student work. To involve the students in the preparatory stages of the genetic genealogy research, part of one of their assignments requires them to attempt to research all known male lines descending from one individual as far as the 10th generation. Although of course some work is better than others, this can provide some basic information and references to sources which can be followed up and which acts as a starting point for work by staff.

You will notice that I have only been discussing secondary sources. The current subsidiary role which research plays in our work makes it difficult for us to afford the time required to research in primary sources. We are dependent on authoritative secondary sources which themselves are based on primary sources, but, as you will see later, we also have the safeguard of DNA evidence for further verification.

Ethical issues and tracing contact details

Once potential candidates for DNA testing have been identified as a result of documentary research, it is important to consider the ethical issues which come into play. These are of two types relating firstly to the choice of invitees and secondly to their participation in the research.

The question of who to invite to take a DNA test as part of the research revolves around whether individuals who have been traced using documentary sources and appear to all intents and purposes to be genuine male line descendants of specific historical individuals are actually who they appear to be. Can they be deemed as verified genetic descendants or not? This is something that can be verified with a high level of confidence

⁷ Lundy, Darryl, *The peerage*.

⁸ Cokayne, George E., ed., *The complete peerage of England, Scotland, Ireland*.

⁹ Mosley, Charles, *Burke's peerage, baronetage & knightage, clan chiefs, Scottish feudal barons*.

¹⁰ Phillips, Chris, *Some corrections and additions to the Complete Peerage*.

¹¹ Cokayne, George E., ed., *Complete baronetage*.

¹² Paul, James Balfour, ed., *The Scots peerage*.

¹³ Phillips, Chris, *Medieval source material on the internet: Heralds' Visitations and the College of Arms*.

¹⁴ Howard, Joseph Jackson and Crisp, Frederick Arthur, eds., *Visitation of England and Wales*.

through Y-DNA testing, but there is always the danger that the test result may throw up a problem. It is possible that there may have been an illegitimacy at some point in the line and of course the longer the line of descent the more chance of this being the case. The most obvious indication of this is if the matches to the test taker's result are predominantly of a different surname. This may or may not be as a result of an illegitimacy. If the matches are not close, it is quite possible that the common ancestor was living before the adoption of fixed surnames, so naturally the surnames would be likely to be different. Another reason could be lack of testing or extinction of male lines after the time of the adoption of surnames. This could also result in there being very few or even no matches at certain levels of testing.

Archie Shaw Stewart is an example of where personal mutations can prove misleading. He only has two matches at the basic level of testing, both with the surname Stewart. This caused some doubts about whether he was a genetic Stewart. Further confirmation was needed. But by upgrading to the next level, the number of matches flooded in, with 58 matches, the vast majority having the surname Stewart. This was due to what can be described as personal mutations – which may have occurred in Archie himself or one of his fairly recent ancestors.

Unexpected illegitimacy in a line becomes a particular problem when titles and landownership is involved. The Pringle of Stichill Baronetcy case¹⁵ in 2016 was a very important high profile case of this type. The final ruling in this case awarded the Baronetcy to the challenging claimant, since DNA evidence proved that the son of the previous holder was not a male heir of his great grandfather. His grandfather was in fact illegitimate. As far as I know this was the first case of this kind, but will probably not be the last.

In order to minimize issues of this sort, we generally try to invite second cousins or perhaps first cousins of a titled or landed individual to test, where there are no titles and lands at stake.

Once a decision has been made on a suitable individual for testing, there is the problem of tracing contact details. If someone appears in *Burke's peerage*, there may be a postal address given, but this is now rather out of date, since it was published in 2003. Other possible sources which can be used are 192.com¹⁶ and the BT phonebook¹⁷, which can be used to verify whether an older address is still valid, and perhaps trace a new address if the name is an unusual one; and the Companies House website¹⁸, since often individuals may be company directors. Facebook is another avenue which can be useful.

If a current domestic or business address can be found, we reach the final stage of the invitation process – gaining consent from the individual to participate either by taking a DNA test or, if they have already taken a test, by joining our closed DNA project, so that their test results are accessible for comparison and analysis. The ethical issues here are that full details of what is involved should be provided to the invitee, to ensure that informed consent is gained; an assurance is given that personal data will be anonymized, unless at a later stage the invitee gives consent for their name to be revealed for specific purposes, such as publicity; and finally, that they are made aware that they have the right to withdraw at any point in the process.

Once an individual has met all these criteria the testing process can begin.

¹⁵ Judicial Committee of the Privy Council (UK), *Judgement in the matter of the Baronetcy of Pringle of Stichill*.

¹⁶ 192.com <https://www.192.com/>

¹⁷ BT, *The phone book*.

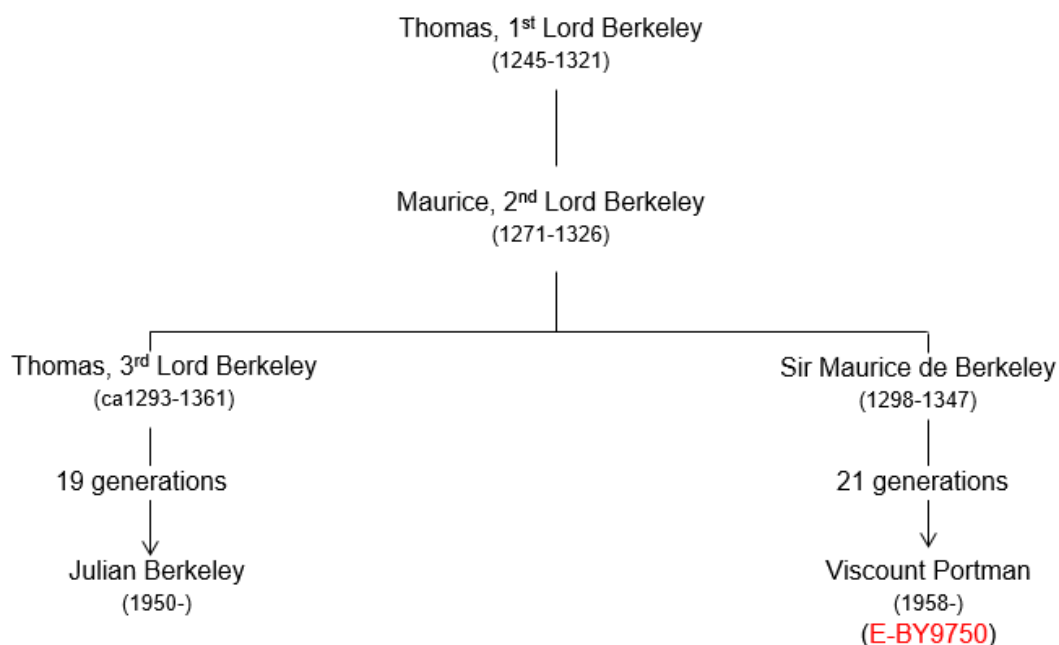
¹⁸ Companies House, *Companies House: search the register*.

Initial DNA testing

The basic initial test which we use is the 37 marker STR test. STR standing for Short Tandem Repeat. This test will in most cases provide verification that the documentary evidence is consistent with the genetic evidence. If the test taker's surname matches with a significant number of others of the same name, then this is a good indication. If not – so the predominant surname is a different one, or there are very few matches at all – it might be necessary to upgrade to a 67 marker test. As we saw this was the case with Archie Shaw Stewart, who only has 2 matches at the 37 marker level but 58 at the 67 marker level. There might also be a case for some SNP testing for further confirmation.

If there are no matches which confirm the documentary evidence, then if possible a descendant from another documented line should be tested. Ideally these two lines should have a common ancestor far back in time. If there is a close match between these results, this gives confidence that they are two unbroken male lines back to the common ancestor and that the results can be accepted as distinguishing that surname. A good example occurs in the case of the Berkeley family (Fig 1).

Fig 1 Outline pedigree of the Berkeley family



Julian Berkeley and Lord Portman have a documented common ancestor in Maurice, 2nd Lord Berkeley who died in 1326. The initial result from Julian was inconclusive, being a rather unusual genetic grouping in Britain – haplogroup E. However, when Lord Portman tested, his result closely matched Julian's at the 67 marker level, with a predicted common ancestor at almost exactly the date known from documentary evidence. This provides robust evidence that what initially seemed an unlikely DNA profile is the true profile for the Berkeley family.

SNP testing

Once verification is satisfactory, the next step is likely to be SNP testing. The type of testing depends on how much analysis has already been done on SNPs and branching for

the specific family concerned. If this is well developed, a SNP pack, which tests for a defined set of SNPs, or a single SNP test may be helpful. Otherwise, a Next Generation Sequencing (NGS) test – usually the Big Y-700 from FTDNA¹⁹ – would be the preferred option.

Further analysis of branching

Supposing documentary research and genetic research has confirmed that a specific family carries a recognised SNP. How can this be translated into something more meaningful to test takers who carry the SNP but have very little documentary evidence? A Macdonald carrying the SNP YP326 will be descended from the 12th century warlord, Somerled, but next wants to know which branch of this very large clan he belongs to. Although he may carry more recent SNPs than YP326, what can these tell him? What he would like to know can be broken down into two questions - when was that SNP formed and in which specific ancestor. A precise estimate of when it was formed would also help to answer the second question, but might still leave a series of possible ancestors from the generation living at that time, so what more can be done to answer his questions?

Age estimates of SNPs have been attempted, particularly on the YFull website²⁰, based on predicted SNP mutation rates, but these can be unreliable. We always have to remember that DNA is subject to random events and that although average mutation rates may allow rough estimates to be made, genealogists are interested in individual people and their verified relationships, not aggregated populations. At the end of the day, estimates are not really satisfactory.

Targeted testing, if it is feasible, has the potential to answer both questions. The ideal situation is to identify a specific individual in which a SNP first occurred – a SNP progenitor. Perhaps the first example of an identified SNP progenitor was Sir John Stewart of Bonkyl (S781) identified in 2014²¹. The beauty of this is that anyone testing positive for a SNP with an identified SNP progenitor will be a male line descendant of that SNP progenitor.

This really brings alive the concept of medieval genealogy for the masses. No significant documentary evidence but genetic evidence showing a male line descent from an identified medieval ancestor.

Identifying a SNP progenitor

Now I will look at the principles of identifying a SNP progenitor. The methodology to achieve this is to attempt to identify two brothers at each generation, trace male line descendants of each and carry out SNP testing.

In Fig 2 descendants of E and F in a hypothetical family have tested positive for FMG1 so it must have been inherited from B. Descendants of C and D have tested negative for FMG1, so it could not have been inherited from A. Therefore since A is negative and B positive for the SNP, it was also not inherited from their father. The conclusion is that B is the SNP progenitor of SNP FMG1.

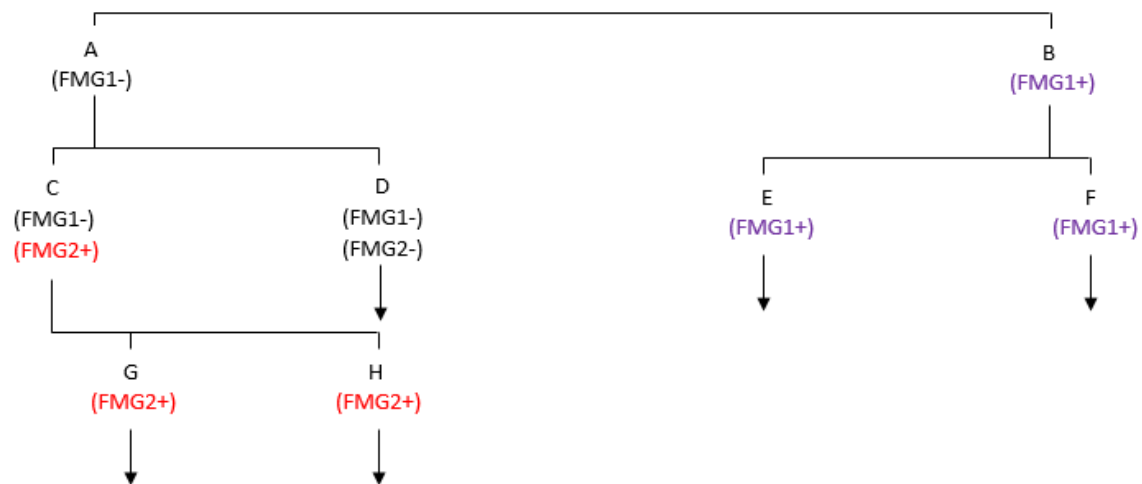
Also, following the same process, C must be the SNP progenitor of FMG2.

¹⁹ Family Tree DNA, <https://www.familytreedna.com/>

²⁰ YFull.

²¹ Macpherson, Craig, Britains DNA discovers genetic marker which originates in Royal Scot 800 years ago.

Fig 2 Hypothetical family showing the use of DNA testing to identify SNP progenitors

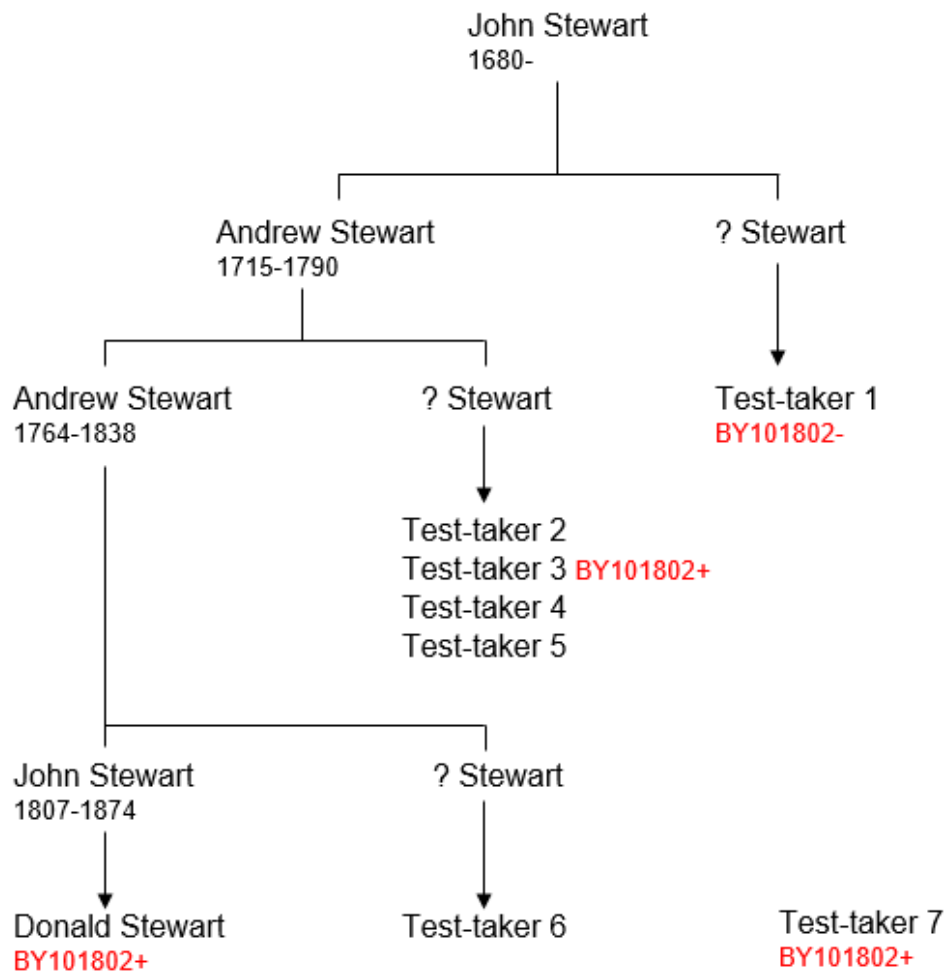


Moving to a specific example (although outwith the medieval period) we have the results of targeted testing undertaken by Donald Stewart, who has recently been identified as carrying the SNP BY101802. Donald was fortunate since many of his documented 4th, 5th and 6th cousins had already tested.

Test-taker 1 had taken a Big Y test and does not carry the SNP. This means that the common ancestor between Donald and Test-taker 1, that is John Stewart, did not carry the SNP. If he did, it would have been inherited by all his sons, including the ancestor of Test-taker 1.

To narrow down where the SNP occurred involves testing male line descendants of two brothers at each generation. Test-takers 2, 3, 4 and 5 all have a common ancestor with Donald – that is Andrew Stewart (1715-1790) – but had not done any SNP testing.

Fig 3. Derived Stewart family tree evidenced by targeted DNA testing for SNP



Test taker 3 has now taken a single SNP test which came back positive for BY101802, so this shows that the SNP first occurred in Andrew Stewart (1715-1790), who passed it on to all of his sons. Andrew Stewart is the SNP progenitor.

Test-taker 7, who does carry the BY101802 SNP, is from N America, with an earliest known ancestor who died in Quebec in 1857. Next steps in the research will involve confirming whether this ancestor was the emigrant or was it his father. The father was almost certainly a son of Andrew who died in 1790, so can his identity be traced?

This SNP is now very important in revealing the origins of the emigrant to N America. So many Americans of Scottish descent are not able to trace their emigrant ancestor to his origins in Scotland, so the discovery of SNPs from this period could make this an easier task.

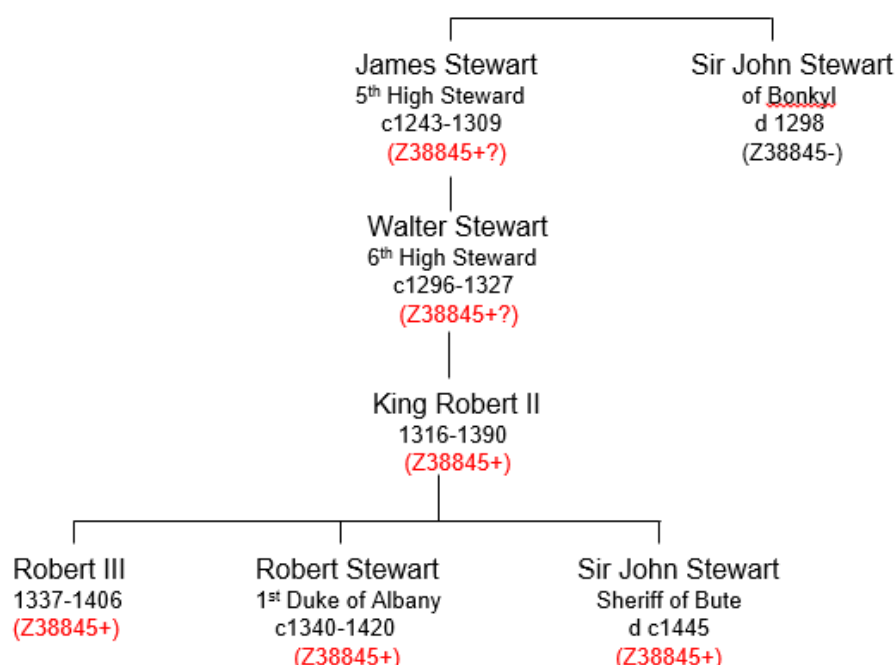
Multi-generational SNP dating

The criteria which must be met to identify a SNP progenitor for the medieval period are challenging, but if they cannot be fully met, it may still be possible to achieve multi-

generational SNP dating. This refines the number of generations within which a SNP must have been formed and can be a useful advance.

Research into the Stewarts shows that the SNP Z38845 is not carried by descendants of Sir John Stewart of Bonkyl, but is carried by descendants of his elder brother James Stewart, 5th High Steward of Scotland. As far as is known, the only surviving male lines from James are through his son Walter and Walter's son King Robert II, thus the SNP must have occurred within these three generations.

Fig 4 Inheritance of SNP Z38845 in Stewart family



Other approaches to discovering medieval descents

All the examples we have looked at so far have been dependent on testing unbroken male lines using Y-DNA, but are there possibilities of extending this to discover descendants from lines including female links?

There are two approaches we can investigate. One possibility is to extend the basic methodology, combining genetic evidence using Y-DNA, with documentary evidence in a slightly different way. The other is to use genetic evidence from autosomal DNA tests in combination with either Y-DNA, documentary evidence or both. Some examples should make this a bit clearer. As far as I am aware little use has been made of these approaches so far, but research within the Declaration of Arbroath Family History Project is following these up.

Our usual methodology has certainly been to use Y-DNA and documentary evidence in combination. This has been through the testing of documented male lines to discover SNPs which can be associated with specific lines of descent, which can sometimes be dated and which can clarify the branching within families. The structure which emerges can then be used as a reference to compare other test takers results to – so for example

do they belong to the Macdonalds of Clanranald or the Bute Stewarts. This branching usually took place in medieval times.

An extension of this methodology could use a SNP which was formed in relatively recent times, say the 17th or 18th centuries, to link in to a known documented descent with one or more female links. The following example is a hypothetical case in which it might be possible to trace an early descent including female links using a SNP from more recent times.

George Home (1698-1760) was a documented descendant of John Stewart, Prior of Coldingham, an illegitimate son of King James V of Scotland. He emigrated to America in 1721 and has many descendants there²². Someone carrying a SNP identified as occurring in George or one of his descendants would not only indicate a descent from George, but since he has a documented ancestry back to King James V, it would also indicate a female line descent from James V.

Autosomal DNA (atDNA) tests are now by far the most popular form of DNA testing and have been marketed widely, particularly by Ancestry. With the very large number of those who have taken autosomal DNA tests and the discovery of increasing numbers of Y-DNA SNPs in the historical era, it is becoming possible to trace long descents which include female links, by combining atDNA with Y-DNA, documentary evidence or both.

Here is one specific example: Ann Stewart Burns and Allyson McAdam had both taken an atDNA test and were reported to be a high-confidence match. An online tree showed that Allyson's grandmother was a daughter of David Stewart and she was able to provide further documentary evidence that David was born at Corradooey, in Donegal, Ireland and was a brother of Ann's great-grandfather Samuel Stewart.

Earlier Y-DNA tests taken by Ann's brother Thomas Philip Stewart had already established that he was descended from the Bute Stewarts whose progenitor was Sir John Stewart, Sheriff of Bute, an illegitimate son of King Robert II of Scotland. Through the link found as a result of atDNA testing, we now know that Allyson McAdam is also descended from Robert II, through a female line.

Case studies

The following case studies make use of some of the examples already mentioned.

As a result of work on the Battle of Bannockburn Family History Project, we have DNA test results from documented descendants of three sons of King Robert II. Archie Shaw-Stewart, descended from King Robert III, Earl Castle Stewart, descended from Robert, Duke of Albany and a private test taker, descended from Sir John Stewart, Sheriff of Bute.

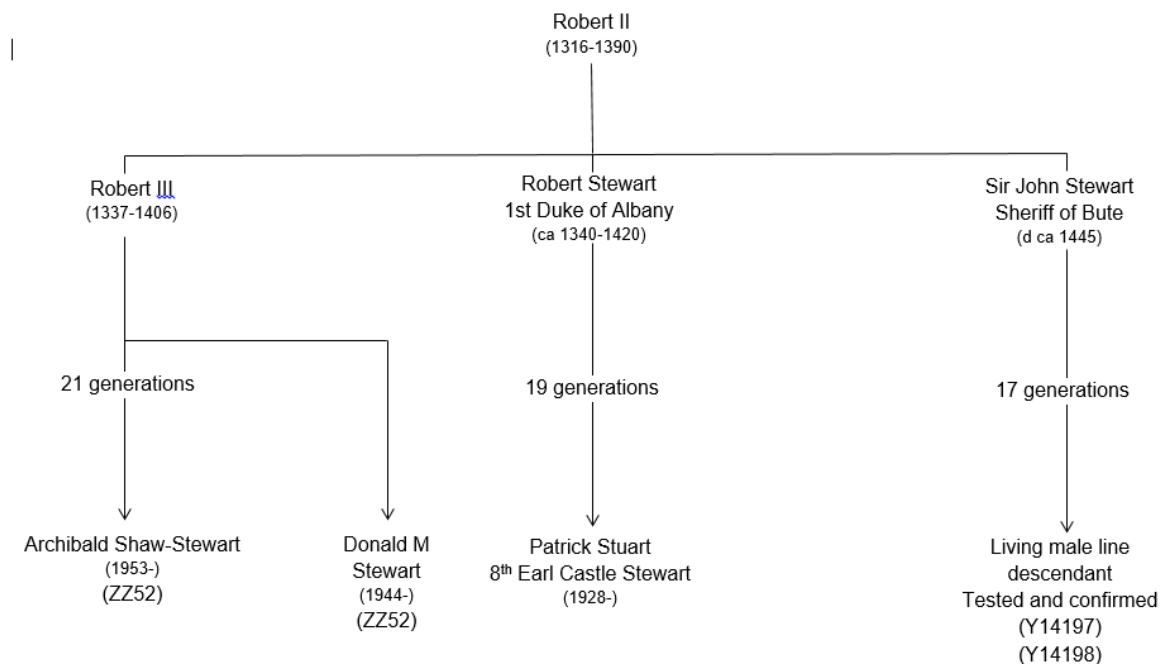
The line from Robert III carries the SNP ZZ52 and the Bute Stewart line carries the SNP Y14197. A number of Stewarts with documentary evidence back no further than the late 17th century have tested positive for these SNPs, for example Donald Stewart, carrying ZZ52 (Fig 5).

Because we know that Earl Castle Stewart and the private test taker do not carry ZZ52, this SNP was not inherited from Robert II, so must have occurred in Robert III or one of his descendants who was a common ancestor of Archie and Donald. We do not yet know at what point Donald's line branched off, but it would have been the mid-17th century or earlier. What we can conclude at present is that anyone carrying the ZZ52 SNP is

²² Clan Home Association, *Hume & Home genealogy pages*.

descended from Robert III, but there may also be other lines of descent from Robert III who do not carry this SNP.

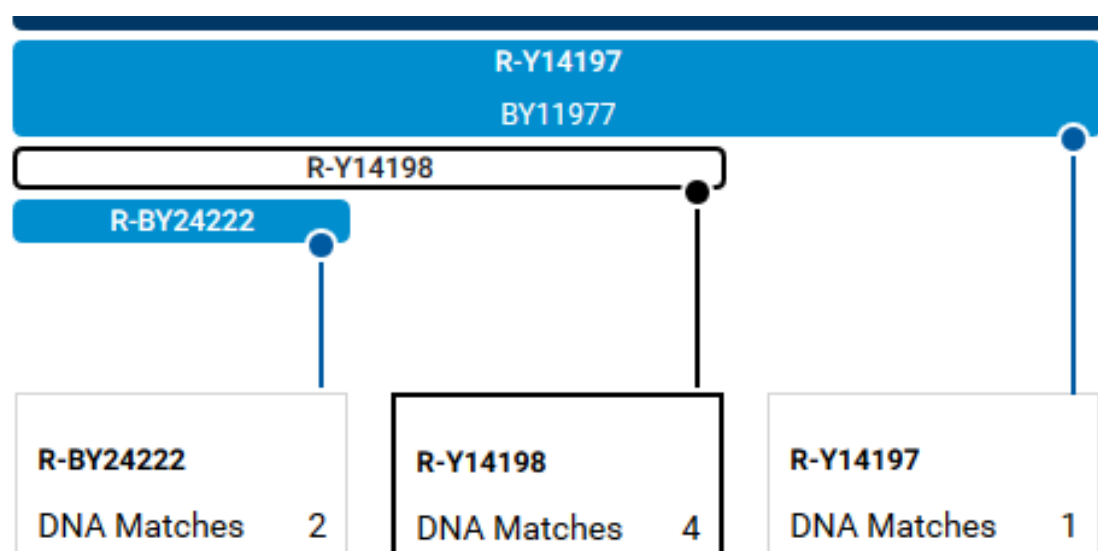
Fig 5. Lines of descent from King Robert II



As in the case of Robert III's descendants, we have found a distinct marker for descendants of Sir John Stewart of Bute – SNP Y14197. Once again this is a SNP which is not carried by descendants of the other two brothers of Sir John, so occurred in Sir John or one of his descendants who was a common ancestor of the private test taker and a number of other Stewarts who also carry this SNP. Another two SNPs have already been found which are downstream, or more recent, than Y14197, namely Y14198 and BY24222. The first of these is also carried by the private test taker, but not BY24222 (see Fig 6).

The image here shows that one individual carries only Y14197, so his line must have branched off earlier than the other test takers. The two test takers who are BY24222 are from a line which branched off later than the date when Y14198 was formed. At present we cannot be any more specific about exactly when and in whom these SNPs first occurred.

Fig 6. SNP comparisons in descendants of Sir John Stewart of Bute



Berkeley family

As mentioned earlier, the initial test result from a member of the Berkeley family was inconclusive, being a rather unusual genetic grouping in Britain – haplogroup E. However, the next test taker, from a distant documented line, and a common ancestor in the 13th century, provided robust evidence for the validity of this as the true profile of this Berkeley family, carrying SNP E-BY9750. See Fig 1 (above) for the lines of descent.

A survey of the closest genetic relatives who have taken advanced DNA tests, shows that their countries of origin are dominated by non-European countries, many from around the Mediterranean.

The estimated formation date of SNP E-Z5009, which is just above E-BY9750, is currently around 980 BC and this is a clear indication that this genetic grouping probably arrived in Britain after that date.

The Berkeleys are generally recognised as one of only a handful of families who can reliably trace their ancestry in England, back through the male line to before the Norman Conquest of England in 1066²³. Although until recently regarded as an Anglo-Saxon family, the genetic evidence indicates that their male line ancestor belonged to a genetic group which arrived in Britain earlier than the Anglo-Saxons' settlement around the middle of the 5th century. Some of this genetic group appear to have travelled over a period of time from southern to northern Spain, eventually arriving in Britain, possibly earlier than the Roman period. Another possibility is that the ancestor was a Roman soldier, recruited in Spain, who settled in Britain during the Roman occupation, which lasted from the first to fifth centuries. Either scenario suggests that their ancestor settled in Britain before the Anglo-Saxon era.

I hope that I have been able to demonstrate the potential for discovering unknown medieval descents through genetic genealogy and how this can provide a gateway to medieval genealogy for the masses. Much more work is required to realise this potential and hopefully the Battle of Bannockburn and Declaration of Arbroath Family History Projects will prove significant milestones in this field.

²³ Wagner, Anthony Richard, *English genealogy*.

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